UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,477	12/04/2003	Edward Hugh Welbon	5681-72500	6232

58467   7590   10/04/2007

MHKKG/SUN
P.O. BOX 398
AUSTIN, TX 78767

EXAMINER
WILSER, MICHAEL P

ART UNIT	PAPER NUMBER
2195	

MAIL DATE	DELIVERY MODE
10/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 December 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 December 2003</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date <u>5/12/04, 4/18/05 & 1/31/07</u>.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-22 are pending in this application.

Drawings

2.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5)

because they include the following reference character(s) not mentioned in the

description: 300 in Figure 3, 400 in Figure 4, and 600 in Figure 6. Corrected drawing

sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add

the reference character(s) in the description in compliance with 37 CFR 1.121(b) are

required in reply to the Office action to avoid abandonment of the application. Any

amended replacement drawing sheet should include all of the figures appearing on the

immediate prior version of the sheet, even if only one figure is being amended. Each

drawing sheet submitted after the filing date of an application must be labeled in the top

margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the

drawings will not be held in abeyance.

Specification

3.   The disclosure is objected to because of the following informalities: the examiner

notes the use of acronyms (e.g. EDO, etc.) throughout the specification without first

including a description in plain text, as required.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly
claiming the subject matter which the applicant regards as his invention.

5.   Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

A. The following terms lack antecedent basis:

(i) said different thread in Claim 7

B. The following claim language is unclear and indefinite:

(i) As per Claim 1 line 3, it recites "coupled". It is unclear as to what and how the detection unit is "coupled". It is uncertain whether the detection unit is connected to the processor, the execution unit, or if it is a connection to where the detection unit could be located elsewhere.

Claim Rejections - 35 USC § 101

6.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7.   Claim 22 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 22 is rejected under 35 U.S.C. 101 because the claimed invention are directed to system claim, but appearing to be comprised of software alone without claiming associated computer hardware required for execution (i.e. claim 22 recited the processor comprises a plurality of means, wherein the plurality of means also can be software per se. Thus it is a software program/application that comprising software modules to performed a certain functions).

Claim Rejections - 35 USC § 102

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9.   Claims 1-16 and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated

by Emer et al. (US 6,073,159).

10.   As per Claim 1, Emer teaches the invention as claimed including a compiler

comprising:

        a. an execution unit configured to execute one or more threads (abstract, lines 1-

3);

        b. a detection unit coupled to detect whether a given thread includes an identifier

(column 2, lines 53-54); and

        c. wherein the execution unit is further configured to selectively continue

execution of the given thread depending upon whether the detection unit detects the

identifier (column 2, lines 55-57).

11.   As per Claim 2, Emer further discloses that the execution unit is configured to
suspend execution of the given thread and execute a different thread (column 4, lines
27-29 & column 6, lines 31-38).

12.   As per Clam 3, Emer further discloses that the executing unit is configured to
continue execution of the given thread (column 1, lines 9-12).

13.   As per Claim 4, Emer further discloses that the execution unit is to suspend the
current thread and execute a different thread in response to receiving a global execution
parameter (column 4, lines 27-29 & column 6, lines 31-38).

14.   As per Claim 5, Emer further discloses that the execution unit is configured to
override the global execution parameter and continue executing the given thread
(column 1, lines 9-12).

15.   As per Claim 6, Emer further discloses of a priority designation unit coupled to
the detection unit configured to assign a priority level to the given thread depending
upon the execution environment in response to the detection unit detecting an identifier
(column 7, lines 52-55).

16.   As per Claim 7, Emer further discloses the execution unit is configured to

suspend execution of the given thread and execute a different thread with a higher

priority level (column 8, lines 26-28).

17.   As per Claim 8, Emer further discloses in response to the given thread having the

same or higher priority than a different thread, to continue execution of the given thread

(column 11, lines 39-42).

18.   As per Claim 9, Emer further discloses the identifier is a unique instruction

(column 4, lines 27-29).

19.   As per Claim 10, Emer further discloses the identifier is a flag including one or

more unused bits of any instruction of the given thread (column 9, lines 23-26).

20.   As per Claims 11 and 21-22, they are rejected for the same reason as Claim 1

above.

21.   As per Claim 12, Emer teaches the invention as claimed including a method

comprising:

        a. executing on or more threads (abstract, lines 1-3);

        b. detecting whether a given thread includes an identifier (column 2, lines 53-54);

and

c. selectively continuing execution of the given thread depending upon whether

the identifier is detected (column 2, lines 55-57).

22.   As per Claims 13-16, they are rejected for the same reason as Claims 2-5 above.

Claim Rejections - 35 USC § 103

23.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

24.   Claim17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Emer et al. (US 6,073,159) in view of Keats et al. (US 6,167,461).

25.   As per Claim 17, Emer teaches the invention substantially as claimed including a

method comprising:

a. detecting whether an indicator is included within the computer program

(column 2, lines 53-54); and

b. processor is configured to selectively continue execution of the given thread (column 2, lines 55-57).

26.   However, Emer does not explicitly disclose generating a low level instruction and including a high level programming instruction. However, Keats discloses a method in which a low level instruction is generated (abstract, lines 4-5) and the computer program includes a high level programming instruction (abstract, lines 16-17).

27.   It would have been obvious to one of ordinary skill in the art at the time of invention to have included high and low level instructions in the invention of Emer. One would have been motivated to have both high and low level instructions since it is necessary to have high level instructions so that programming of the system can be done and low level instructions for the machine hardware to be able to communicate with the rest of the system.

28.   As per Claim 18, Keats further discloses the indicator is a compiler directive (column 4, lines 5-9).

29.   As per Claim 19, Keats further discloses the indicator is an assembly language subroutine (column 11, lines 8-10).

30.   As per Claim 20, Keats further discloses the indicator is a unique high-level

instruction (column 3, lines 22-24).

Conclusion

31.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

    a. Rodgers et al. (US 6,889,319) Method and Apparatus for Entering and Exiting

    Multiple Threads Within a Multithreaded Processor.

    Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael Wilser whose telephone number is (571) 270-

1689. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST (Alt Fridays

Off).

    If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPW
August 13, 2007

MENG-AL T. AN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100